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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/045,524

Filing Date: November 07, 2001

Appellant(s): CRUTCHFIELD, RANDOLPH E.

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Timothy N. Trop  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 07/10/2006 appealing from the Office action

mailed 02/23/2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,097,378	Nakabayashi	03-1992
5,307,326	Osawa	04-1994
6,594,366	Adams	07-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claims 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by U.**

**S. Patent No. 5097378.**

Regarding claim 32, Nakabayashi discloses a cassette recorder which comprises an adjustable variable impedance means, which indicates a selectively variable impedance; and controller (5) which receives a state to the recorder, wherein the control sends a control signal in relation the state of the recorder, wherein the impedance may be adjusted therein, accordingly (col. 3, lines 31-34, 51-60, col. 7, lines 15-19, 25-28, and 40-48, col. 12, lines 16-68 – col. 13, lines 1-9).

Regarding claim 33, Nakabayashi discloses everything claimed as applied above (see claim 32). Nakabayashi discloses a cassette tape recorder, which reads on cassette tape.

Regarding claim 34, Nakabayashi discloses everything claimed as applied above (see claim 32). Nakabayashi discloses a sensor coupled to the controller (col. 6, lines 53-56), which indicates a sensor, therein.

**Claims 35-37 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5307326.**

Regarding claim 35, Osawa discloses a cassette adapter for signal playback apparatus. Osawa disclosure comprises an impedance adjusting circuit (11) – col. 3, lines 43-53, 64-68 and col. 4, lines 3-11, which indicates varying the impedance.

Regarding claim 36, Osawa discloses everything claimed as applied above (see claim 35). Osawa discloses the detect of an operational state of a cassette player enabling a control signal to be provided via the impedance adjusting circuit, which indicates receiving a cassette player command and translating the command for varying impedance - col. 1, lines 55-68 and col. 2, lines 1-11 and col. 3, lines 43-53, 64-68.

Regarding claim 37, Osawa discloses everything claimed as applied above (see claim 35). Osawa further discloses that performance on the invention may be utilized in a digital audio tape recorder of the like (col. 5, lines 57-61), which indicates a remote device in the form of a digital audio player.

**Claims 38-39 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Adams, U. S. Patent No. 6594366.**

Regarding claim 38, Adams discloses a headset/radio auto sensing jack (figures 1-3). Adams' disclosure comprises an electronic device (50) with a sensing circuit

(figure 3 - 201/210), which includes comparators for detecting and comparing the impedance levels (for sensing low or high impedance from a headphone) - (col. 1, lines 51-67, col. 2, lines 48-57 and lines 60-65, col. 3, lines 62-67-col. 4, lines 16-45), which reads on an impedance level detector, and an interface is inherently disclosed as evident of the plug connection o the headphones to the electronic device (figure 2 and 3) for receiving indication that the output from the electronic device has changed , which reads on an interface therein.

Regarding **claim 39**, Adams discloses everything claimed as applied above (see claim 38). Adams discloses that the sensing circuit detects two different impedance levels (col. 1, lines 51-55).

Regarding **claim 41**, Adams discloses everything claimed as applied above (see claim 38). Adams discloses the detection of the impedance when the electronic device is in the AM/FM radio and telephone modes, which inherently indicates that device is in the play mode or play command.

**Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adams.**

Regarding **claim 40**, Adams discloses everything claimed as applied above (see claim 38). Adams fails to disclose that sensing circuit detecting one of at least four impedance levels. Detecting various impedance levels is well known in the art. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Adams by providing the detection of one of four

impedance levels for a device that detection at different operation stages for the purpose of ensuring efficient operating parameters for quality performance as desired for the device.

#### **(10) Response to Argument**

Appellant argued on p. 10, section A of the Argument with regard to claims 32-34 that Nakabayashi does not use the impedance of a selectively variable impedance to signal a state. The Examiner disagrees. In addition to the rejection as written on claims 32-34 above, it is further noted that switches 9-12 as shown in Fig. 2 of Nakabayashi are **variable impedance switches** that are having variable impedance (read on 'a selectively variable impedance' as claimed) and is coupled or connected to a bias circuit 7 for **varying the impedance** of these switches (see col. 3, lines 54-56), which upon individual selection provides for a different operation of the cassette player (i.e., a state of the cassette player) and are indicative of a different impedance (see col. 6, line 53-col. 7, line 57), which constitutes varying impedance of a selectively variable impedance, as explained therein as claim 32 is based. Appellant's broadly claimed language of claims 32-34 fails to limit or exclude the meaning and/or function of a selectively varying impedance, and is clearly met by the '**variable impedance switches** that are having variable impedance' as explained above.

With regard to the argument of "impedance signaling or use of impedance levels to signal a state", it is noted that the features upon which applicant relies (i.e., impedance signaling, impedance levels) are not recited in the rejected claim(s).

Therefore, the Nakabayashi rejection of claims 32-34 is maintained.

Appellant argued on p. 10-11, section B of the Argument with regard to claims 35-37 mainly that Osawa fails to disclose the impedance adjusting circuit 11 indicate a state. The Examiner disagrees. In addition to the rejection as written on claims 35-37 above, Osawa shows a method as further discussed below that receiving a selection of one of at least 2 states (i.e., ON/OFF control signal S2 in response to the detection of a cassette insertion/ejection (the states as claimed) to and from a cassette insertion port 2A of the cassette 4A, see Fig. 1); and varying the impedance of a selectively variable impedance (impedance adjusting circuit 11) in a first device (cassette 4A) to develop a state signal (On control signal S2 of, for example 2.15V; or OFF control signal S2 of 1.69V) for a remote second device (CD player 3) to indicate the selected state (i.e., ON/OFF or playback/stop state of the second device), see col. 2, line 43-col. 3, line 68. As clearly explained above, the impedance circuit 11, which is coupled with a control circuit varies in different operational states (ON/OFF) for varying respect output voltage having one of two values (varying impedance to generate different voltage), which constitutes as a change in impedance for enabling the device to play or not play (i.e., a state as claimed). And the broadly claimed language of fails to limit or exclude the meaning and/or function of selectively varying impedance, and is clearly read on by Ogawa. And shown in Fig. 3 of Osawa, two variable resistors (RV1 and RV2) are used, contrary to appellant's argument of adjusting circuit 11 has simply fixed resistors.

As for the argument regarding "a cassette player command and translating the command by varying the impedance" as in claim 36, this limitation is clearly met by the ON/OFF control signal S2 in response to the detection of a cassette insertion/ejection (the states as claimed) to and from a cassette insertion port 2A of the cassette 4A, see Fig. 1); and varying the impedance of a selectively variable impedance (impedance adjusting circuit 11) in a first device (cassette 4A) to develop a state signal, as explained above.

Therefore, the Osawa rejection of claims 35-37 is maintained.

Appellant argued on p. 11-12, section C of the Argument with regard to claims 38-39 and 41 mainly that Adams fails to point out the claimed interface function that is based on the impedance level detection. The Examiner disagrees. In addition to the rejection as written on claims 38-39 and 41 above, Adams shows in Fig. 3 with the switches S1 and S2 and control 208 is changing the operation of a digital audio player (50) base on information provided by an impedance level detector (210), which met all the claimed limitation as also discussed in rejection for claim 38 above (see col. 1, lines 51-67). The claimed interface is met by the fact that the switches, the control, and the jack 120 are being where the two difference devices (i.e., digital audio player 50 and headset 101/103) are interacted (i.e., plug in). The function of the digital audio player is changed (i.e., telephone or monophonic mode with microphone ON, or stereophonic mode with AM/FM radio functionality) when different impedance level is being detected (col. 2, lines 30-65) as discloses by Adams, contrary to Appellant's argument.

With regard to argument about the claimed limitation of "the indicative condition of a condition including one of a play, a stop, a pause or a rewind command" of claim 41, the different modes (radio or telephone mode) switching of Adams would have inherently including a stop or a play command as claimed for switching the digital audio device from one operational function to an other (i.e., stop the radio mode of the device and play the telephone mode of the device), and would have met the claimed invention as recited in claim 41.

Therefore, the Adams rejection of claims 38-39 and 41 is maintained.

It is noted a typographical error in the final rejection of 02/23/2006 for claim 41, but it was meant for claim 40 actually. This minor error is corrected hereto as the rejection is intended for claim 40, not claim 41.

Appellant argued on p. 12, section D of the Argument with regard to claim 40 mainly that there is insufficient evidence that Adams discloses four impedance levels as claimed. The Examiner disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant rejection to claim 40 as stated above, the Examiner's rejection is based on 35 USC 103(a) that since it is well known in the art for detecting various impedance levels, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of

Adams by providing the detection of one of four impedance levels for a device that detection at different operation stages for the purpose of ensuring efficient operating parameters for quality performance as desired for the digital audio player of Adams.

As these are the totality of arguments presented, and they have been found unpersuasive, the existing rejection based on Nakabayashi, Osawa, and Adams is deemed appropriate.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Xu Mei  
11/25/2006

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